USDA

United States Department of Agriculture

Resource Stewardship Evaluation Tool (RSET)

Stand Alone Tools

Natural Resources Conservation Service

nrcs.usda.gov/

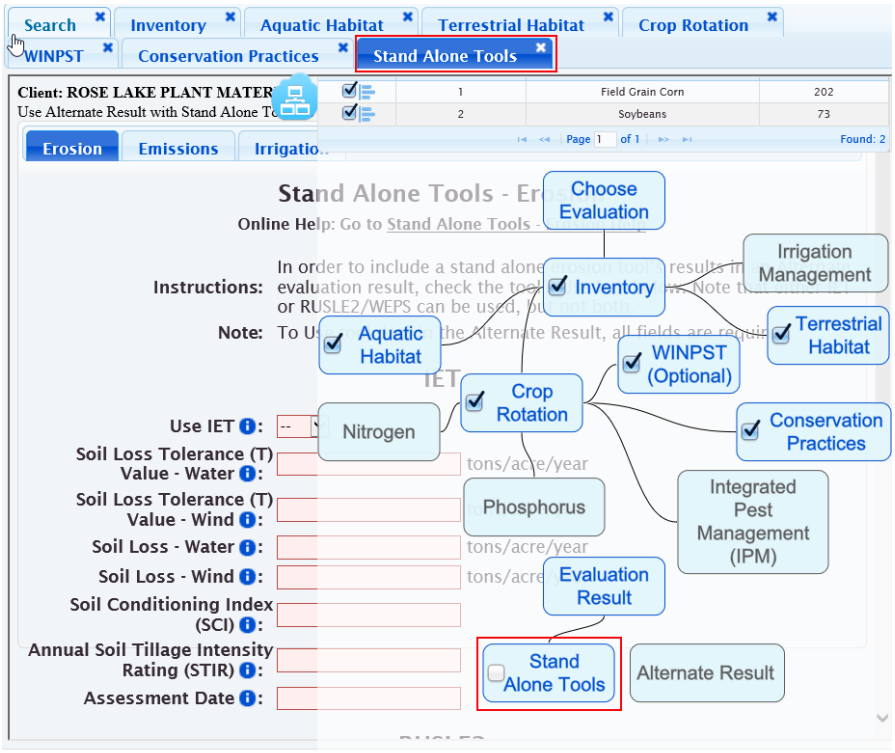
Contents

Stand Alone Tools Overview

The Stand Alone Tools tab allows optional override of some standard stewardship results with external tool results. The goal is to capture the most accurate characterization of stewardship. Optional override of standard stewardships results can be done on the Stand Alone Tools tab with the following options available:

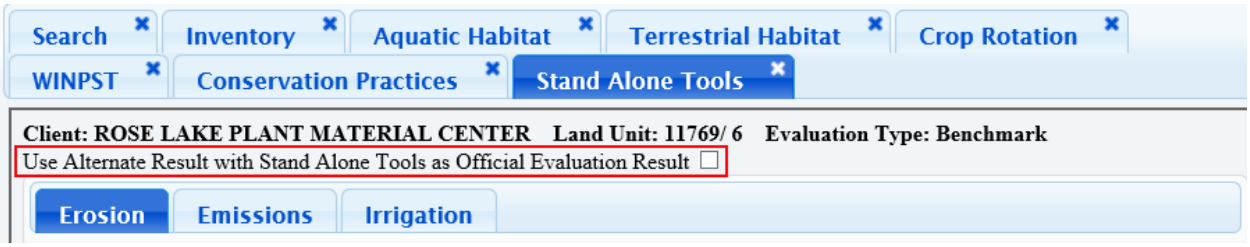
- Erosion Tools (IET, RUSLE2, WEPS)
- Emissions Tool (COMET)
- Irrigation (FIRI)

The standard Evaluation Result must be completed in Resource Stewardship to access the Stand Alone Tools option. Once you click on the Stand Alone Tools box in the Roadmap, the Stand Alone Tools tab will also appear at the top of the page.

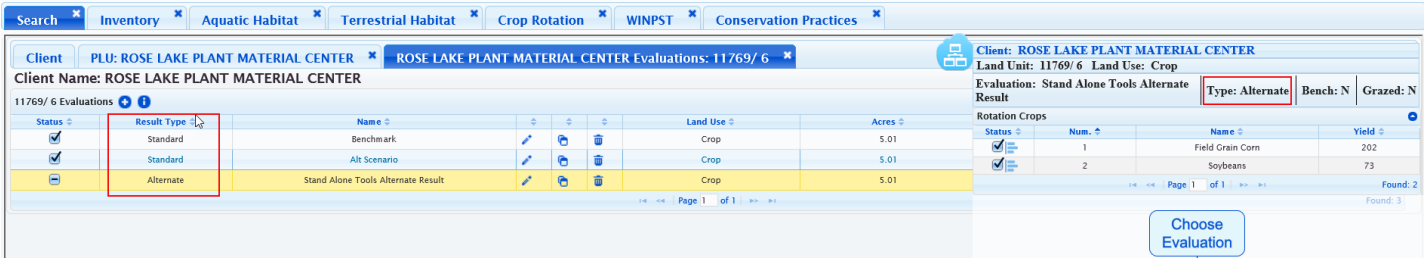


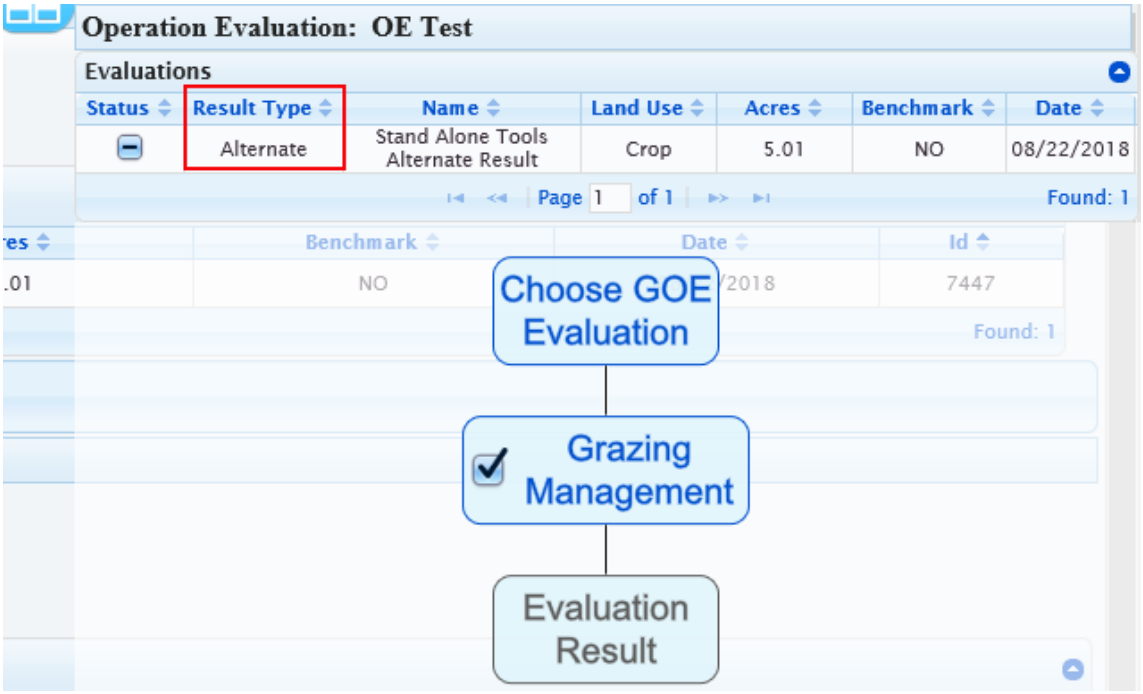
Stand Alone Tool Result vs. Standard Result?

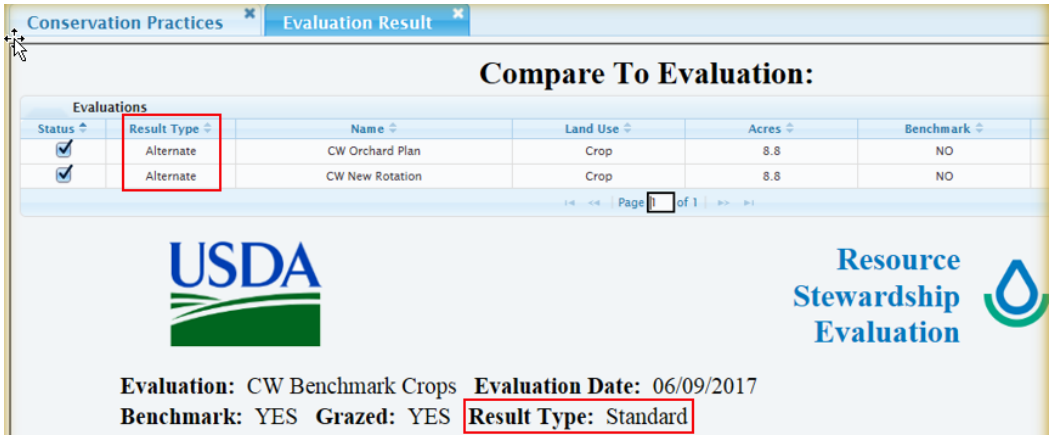
While the result types from Stand Alone Tool results and standard results can both be viewed in the working context of an individual evaluation, only one can be chosen as the official evaluation result. The official result is used for comparisons, when included in the Operation Evaluation (OE), for reporting, and whenever one answer is needed. The default result type is Standard. To set the Stand Alone Tool result as the official result type, click the **Use Alternate Result with Stand Alone Tools as Official Evaluation Result** box.



The official result type displayed (Standard or Alternate) can be found on the evaluation grids, roadmap, and final reports (see below for examples).

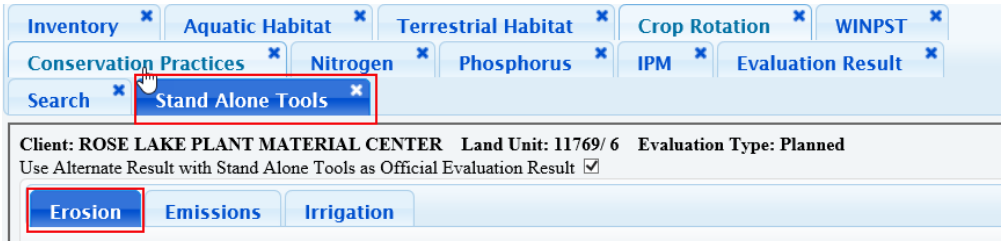






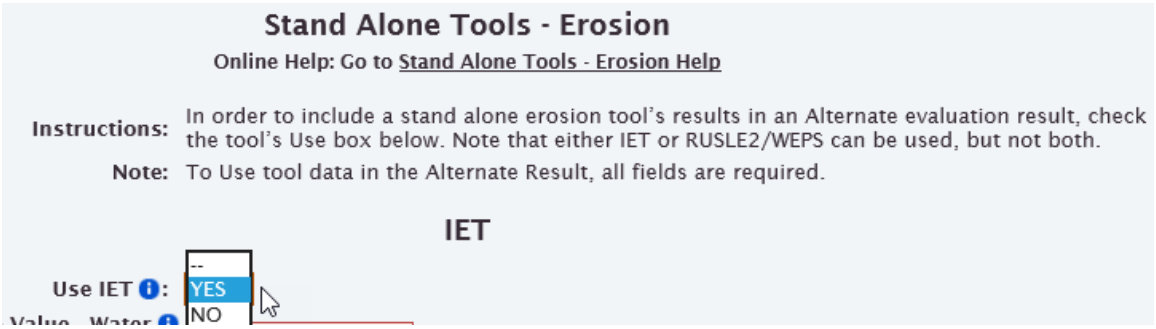
Erosion Stand Alone Tool

1. Select the **Stand Alone Tools** tab, then select **Erosion**.

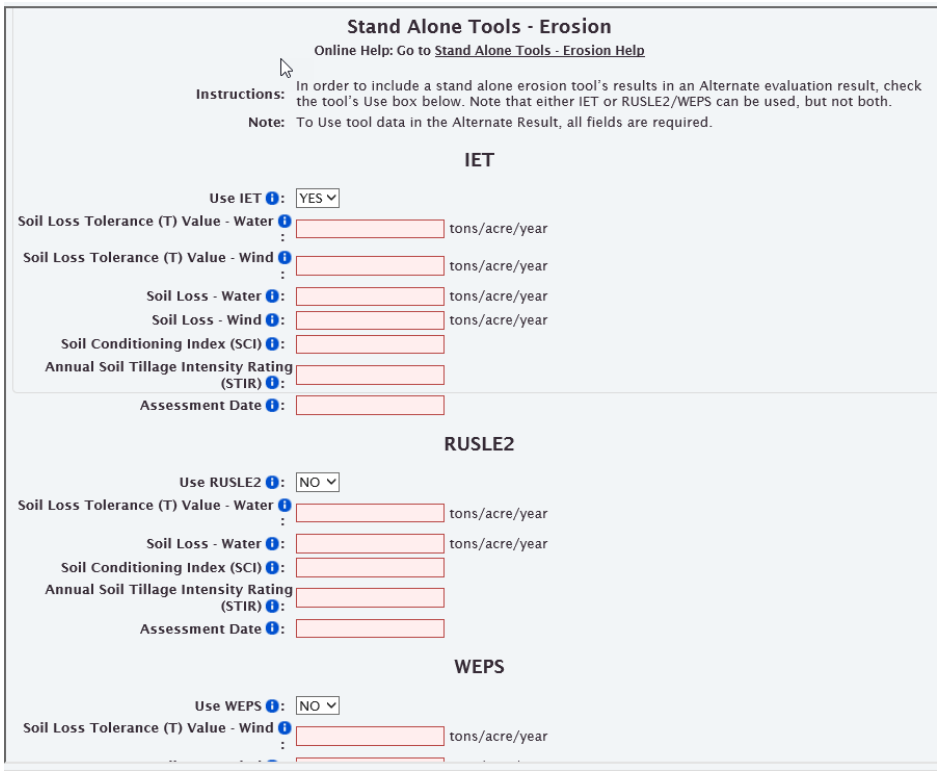


2. Select **Yes** for the Erosion Stand Alone Tool that you would like to use and **No** for the tool(s) you do not want to use.

   Note: Either IET or RUSLE2/WEPS can be used, but not both. Resource Stewardship auto updates "Use" answers to maintain this constraint. Data entered is still stored in RS, even when not in "use".



3. Input the information from IET or RUSLE2/WEPS into the corresponding Resource Stewardship input boxes.



IET Inputs

Use IET: Yes/No. Select Yes to use result in Alternative Evaluation

Soil Loss Tolerance (T) Value – Water: Number from 1 to 5

Soil Loss Tolerance (T) Value – Wind: Number from 1 to 5

Soil Loss – Water: Number from 0.01 to 99999.99 (two decimal places allowed)

Soil Loss – Wind: Number 0 to 200 (two decimal places allowed)

Assessment Date: MM/DD/YYYY

RUSLE2 Inputs

Use RUSLE2: Yes/No. Select Yes to use result in Alternative Evaluation

Soil Loss Tolerance (T) Value – Water: Number from 1 to 5

Soil Loss – Water: Number from 0.01 to 99999.99 (two decimal places allowed)

Soil Conditioning Index (SCI): Number from -20 to 20 (three decimal places allowed)

Annual Soil Tillage Intensity Rating (STIR): Number 0 to 2000 (two decimal places allowed)

Assessment Date: MM/DD/YYYY

WEPS Inputs

Use WEPS: Yes/No. Select Yes to use result in Alternative Evaluation

Soil Loss Tolerance (T) Value – Wind: Number from 1 to 5

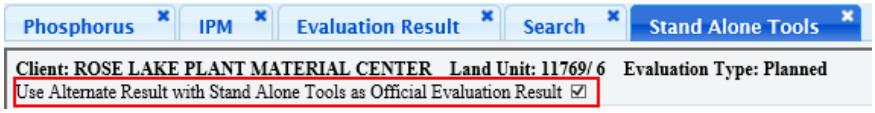
Soil Loss – Wind: Number from 0 to 200 (two decimal places allowed)

Soil Conditioning Index (SCI): Number from -20 to 20 (three decimal places allowed)

Annual Soil Tillage Intensity Rating (STIR): Number 0 to 2000 (two decimal places allowed)

Assessment Date: MM/DD/YYYY

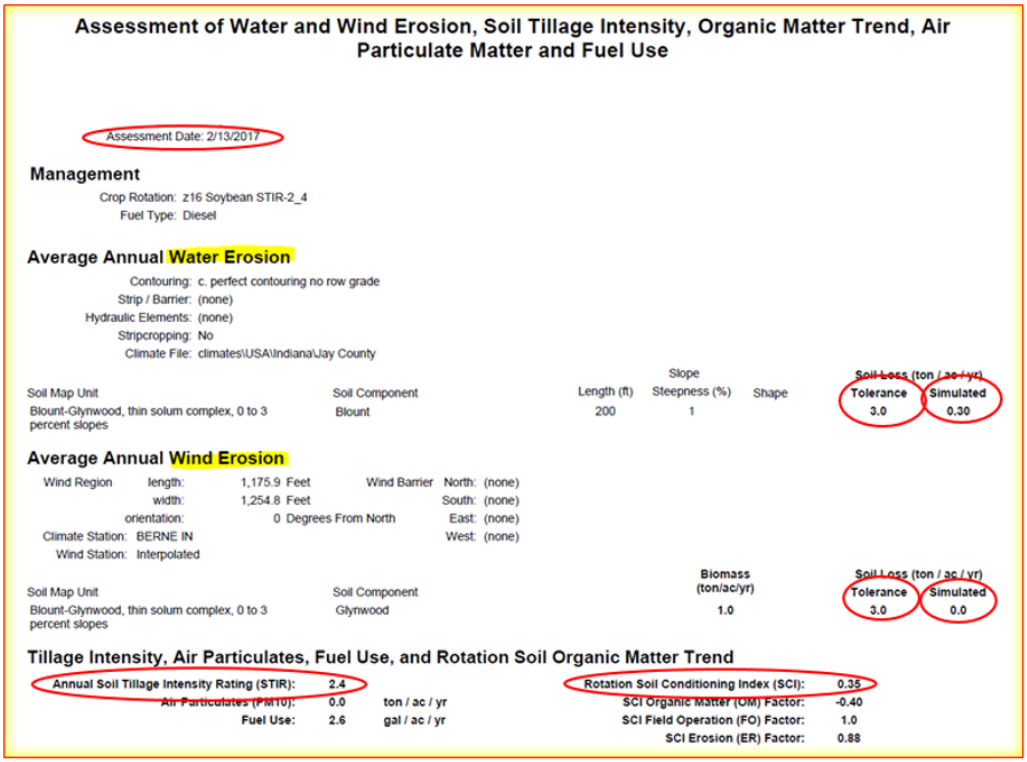
4. Check **Use Alternate Result with Stand Alone Tools as Official Evaluation Result** at the top of the page to use the Erosion Stand Alone Tool to replace the standard evaluation result.



5. Click **Save.**

See below for sample reports and where to locate corresponding information from each type of report to enter into RS.

Sample IET report and corresponding RS entries



Assessment of Water and Wind Erosion, Soil Tillage Intensity, Organic Matter Trend, Air Particulate Matter and Fuel Use

Assessment Date: 2/13/2017

Management

Crop Rotation: z16 Soybean STIR-2_4
Fuel Type: Diesel

Average Annual Water Erosion

Contouring: c. perfect contouring no row grade
Strip / Barrier: (none)
Hydraulic Elements: (none)
Stripcropping: No
Climate File: climates\USA\Indiana\Jay County

Soil Map Unit	Soil Component	Length (ft)	Slope Steepness (%)	Shape	Soil Loss (ton / ac / yr) Tolerance	Simulated
Blount-Glynwood, thin solum complex, 0 to 3 percent slopes	Blount	200	1		3.0	0.30

Average Annual Wind Erosion

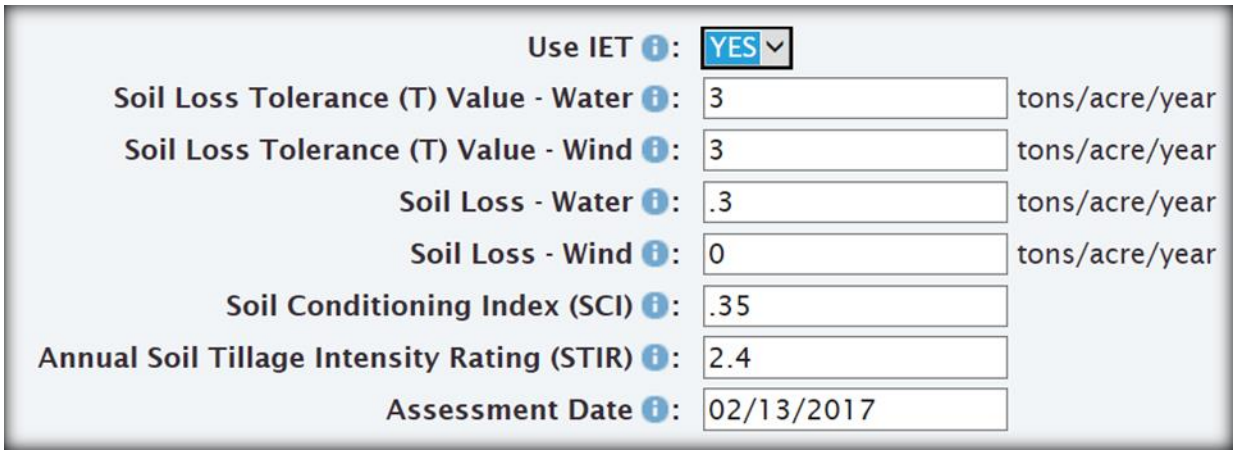
Wind Region length: 1,175.9 Feet
width: 1,254.8 Feet
orientation: 0 Degrees From North
Climate Station: BERNE IN
Wind Station: Interpolated
Wind Barrier North: (none)
South: (none)
East: (none)
West: (none)

Soil Map Unit	Soil Component	Biomass (ton/ac/yr)	Soil Loss (ton / ac / yr) Tolerance	Simulated
Blount-Glynwood, thin solum complex, 0 to 3 percent slopes	Glynwood	1.0	3.0	0.0

Tillage Intensity, Air Particulates, Fuel Use, and Rotation Soil Organic Matter Trend

Annual Soil Tillage Intensity Rating (STIR): 2.4
Air Particulates (PM10): 0.0 ton / ac / yr
Fuel Use: 2.6 gal / ac / yr
Rotation Soil Conditioning Index (SCI): 0.35
SCI Organic Matter (OM) Factor: -0.40
SCI Field Operation (FO) Factor: 1.0
SCI Erosion (ER) Factor: 0.88

Corresponding RS entries



Use IET:	YES	
Soil Loss Tolerance (T) Value - Water:	3	tons/acre/year
Soil Loss Tolerance (T) Value - Wind:	3	tons/acre/year
Soil Loss - Water:	.3	tons/acre/year
Soil Loss - Wind:	0	tons/acre/year
Soil Conditioning Index (SCI):	.35	
Annual Soil Tillage Intensity Rating (STIR):	2.4	
Assessment Date:	02/13/2017	

Key data from IET reports can override the following RS Key Indicators:

- Wind erosion
- Water erosion

- Soil carbon

Sample RUSLE2 report and corresponding RS entries

Sample RUSLE2 report and corresponding RSET entries

RUSLE2 Profile Erosion Calculation Record

Owner/Operator: Tract: Field:

Inputs:

Location: USA\Nebraska\Kearney County
Soil: Nebraska Soils\Kearney County, Nebraska\4834 Valentine loamy fine sand, rolling\Valentine loamy fine sand 98%
Slope length (along slope): 150 ft
Avg. slope steepness: 6.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/a*
managements\CMZ 24\c.Other Local Mgt Records\corn soybean\100% NT, anhydrous	vegetations\Corn, grain	bushels	112.00
managements\CMZ 24\c.Other Local Mgt Records\corn soybean\100% NT, anhydrous	vegetations\Soybean, mw 30 in rows	bu	30.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Adjust res. burial level: bury 30% more than normal

Outputs:

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
4/20/0	Planter, double disk opnr w/fluted coulter	Corn, grain	44
10/20/0	Harvest, killing crop 50pct standing stubble		71
5/10/1	Planter, double disk opnr w/fluted coulter	Soybean, mw 30 in rows	57
10/10/1	Harvest, killing crop 50pct standing stubble		71

Soil loss for cons. plan: 0.53 t/ac/yr Sediment delivery: 0.53 t/ac/yr T value: 5.0 t/ac/yr

Soil conditioning index (SCI): 0.476
Avg. annual slope STIR: 2.59

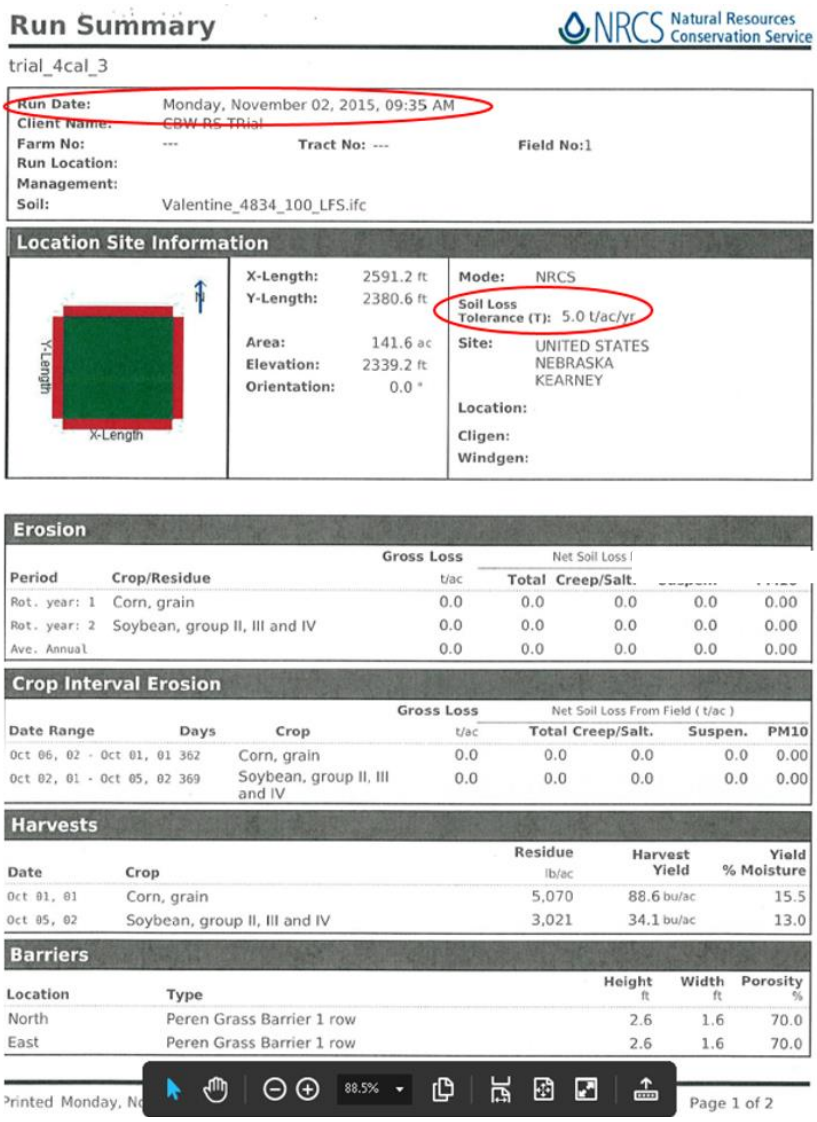
Corresponding RS entries

Use RUSLE2:	YES	
Soil Loss Tolerance (T) Value - Water:	5	tons/acre/year
Soil Loss - Water:	.53	tons/acre/year
Soil Conditioning Index (SCI):	.476	
Annual Soil Tillage Intensity Rating (STIR):	2.59	
Assessment Date:	06/20/2017	

Key data from RUSLE2 reports can override the following RS Key Indicators:

- Water erosion
- Soil carbon

Sample WEPS report and corresponding RS entries



Run Summary

NRCS Natural Resources Conservation Service

trial_4cal_3

Run Date: Monday, November 02, 2015, 09:35 AM
Client Name: CBW RS TRial
Farm No: --- Tract No: --- Field No:1
Run Location:
Management:
Soil: Valentine_4834_100_LFS.ifc

Location Site Information

X-Length: 2591.2 ft
Y-Length: 2380.6 ft
Area: 141.6 ac
Elevation: 2339.2 ft
Orientation: 0.0 °

Mode: NRCS
Soil Loss Tolerance (T): 5.0 t/ac/yr
Site: UNITED STATES NEBRASKA KEARNEY
Location:
Cligen:
Windgen:

Erosion

Period	Crop/Residue	Gross Loss t/ac	Net Soil Loss Total	Creep/Salt.	Suspen.	PM10
Rot. year: 1	Corn, grain	0.0	0.0	0.0	0.0	0.00
Rot. year: 2	Soybean, group II, III and IV	0.0	0.0	0.0	0.0	0.00
Ave. Annual		0.0	0.0	0.0	0.0	0.00

Crop Interval Erosion

Date Range	Days	Crop	Gross Loss t/ac	Net Soil Loss From Field (t/ac) Total	Creep/Salt.	Suspen.	PM10
Oct 06, 02 - Oct 01, 01	362	Corn, grain	0.0	0.0	0.0	0.0	0.00
Oct 02, 01 - Oct 05, 02	369	Soybean, group II, III and IV	0.0	0.0	0.0	0.0	0.00

Harvests

Date	Crop	Residue lb/ac	Harvest Yield	Yield % Moisture
Oct 01, 01	Corn, grain	5,070	88.6 bu/ac	15.5
Oct 05, 02	Soybean, group II, III and IV	3,021	34.1 bu/ac	13.0

Barriers

Location	Type	Height ft	Width ft	Porosity %
North	Peren Grass Barrier 1 row	2.6	1.6	70.0
East	Peren Grass Barrier 1 row	2.6	1.6	70.0

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Run Summary

NRCS Natural Resources Conservation Service

trial_4cal_3

Barriers

Location	Type	Height ft	Width ft	Porosity %
South	Peren Grass Barrier 1 row	2.6	1.6	70.0
West	Peren Grass Barrier 1 row	2.6	1.6	70.0

SCI Summary

Soil Conditioning Index:	0.4	SCI Subfactors	
Energy Calculator:	1.9 gal diesel/ac	OM:	-0.25
Average Annual STIR:	4.5	FO:	0.96
Wind Erosion Soil Loss:	0.0 t/ac	ER:	0.79
Water Erosion Soil	0.5 t/ac		

Rotation Stir Energy

Date	Operation	Fuel	Stir	Energy Btu/ac	Cost USD/ac
May 01, 01	Planter, double disk opnr	Diesel	2.4	53,881	1.54
Oct 01, 01	Harvest, killing crop 50pct standing stubble	Diesel	0.1	187,386	5.36
May 10, 02	Drill or airseeder, double disk	Diesel	6.3	44,152	1.26
Oct 05, 02	Harvest, killing crop 50pct standing stubble	Diesel	0.1	187,386	5.36
		Total / ac		472,805	13.51
		Total	9.1	66,954,372	1,913.55

Crop Interval Stir Energy

Date Range	Crop	Stir	Energy Btu/ac	Cost USD/ac
Oct 06, 02 - Oct 01, 01	Corn, grain	2.6	241,267	6.90
Oct 02, 01 - Oct 05, 02	Soybean, group II, III and IV	6.5	231,538	6.62

Notes

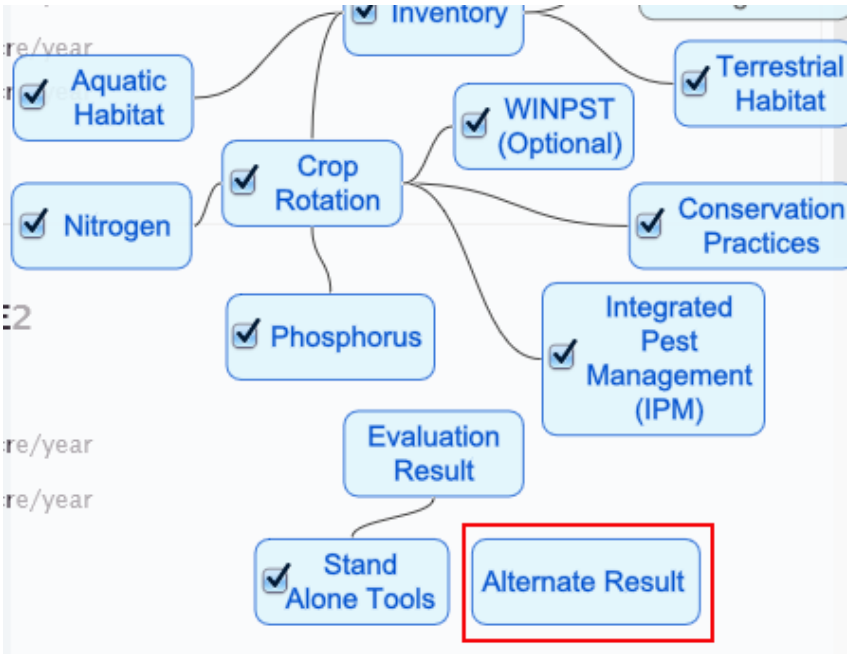
Corresponding RS entries

Use WEPS:	YES	
Soil Loss Tolerance (T) Value - Wind:	5	tons/acre/year
Soil Loss - Wind:	0	tons/acre/year
Soil Conditioning Index (SCI):	.4	
Annual Soil Tillage Intensity Rating (STIR):	4.5	
Assessment Date:	11/02/2015	

Key data from WEPS reports can override the following RS Key Indicators:

- Wind erosion
- Soil carbon

6. Click the **Roadmap** and select **Alternate Result** to view the evaluation.

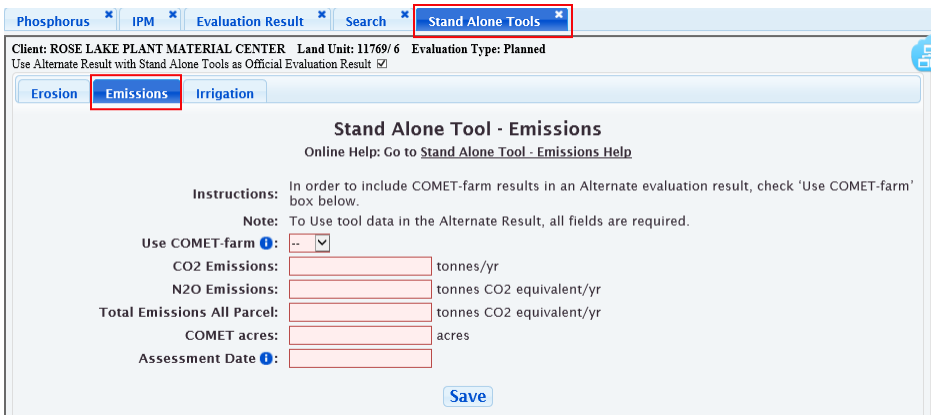


Below is an example of what the final evaluation looks like when the IET Stand Alone Tool is utilized instead of the standard Resource Stewardship results.

Emissions Stand Alone Tool

COMET-farm results can be used as a Stand Alone Tool evaluation result in RS to evaluate emissions.

1. Select the **Stand Alone Tools** tab, then select **Emissions**.



2. Answer the corresponding questions based on the COMET-farm report.

COMET-farm Inputs

Use COMET-farm: Yes/No. Select Yes to use result in Alternative Evaluation

CO2 Emissions: Number from -10000 to 10000 (three decimal places allowed). Unit is tonnes CO2 equivalent/yr.

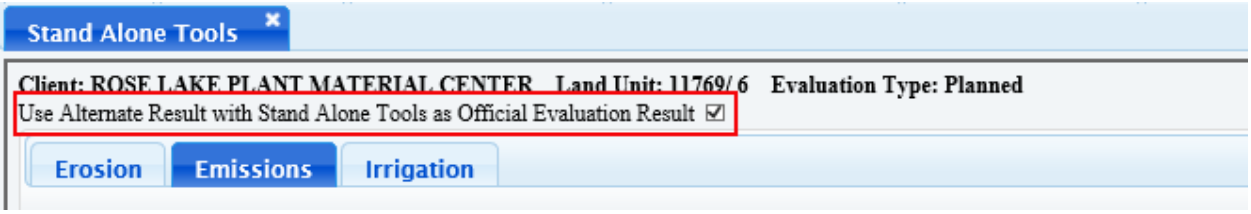
N2O Emissions: Number from -10000 to 10000 (three decimal places allowed). Unit is tonnes CO2 equivalent/yr.

Total Emissions All Parcel: Number from -10000 to 10000 (three decimal places allowed). Unit is tonnes CO2 equivalent/yr.

COMET acres: Number from 0.01 to 100000 (two decimal places allowed). Unit is tonnes CO2 equivalent/yr. Unit is acres.

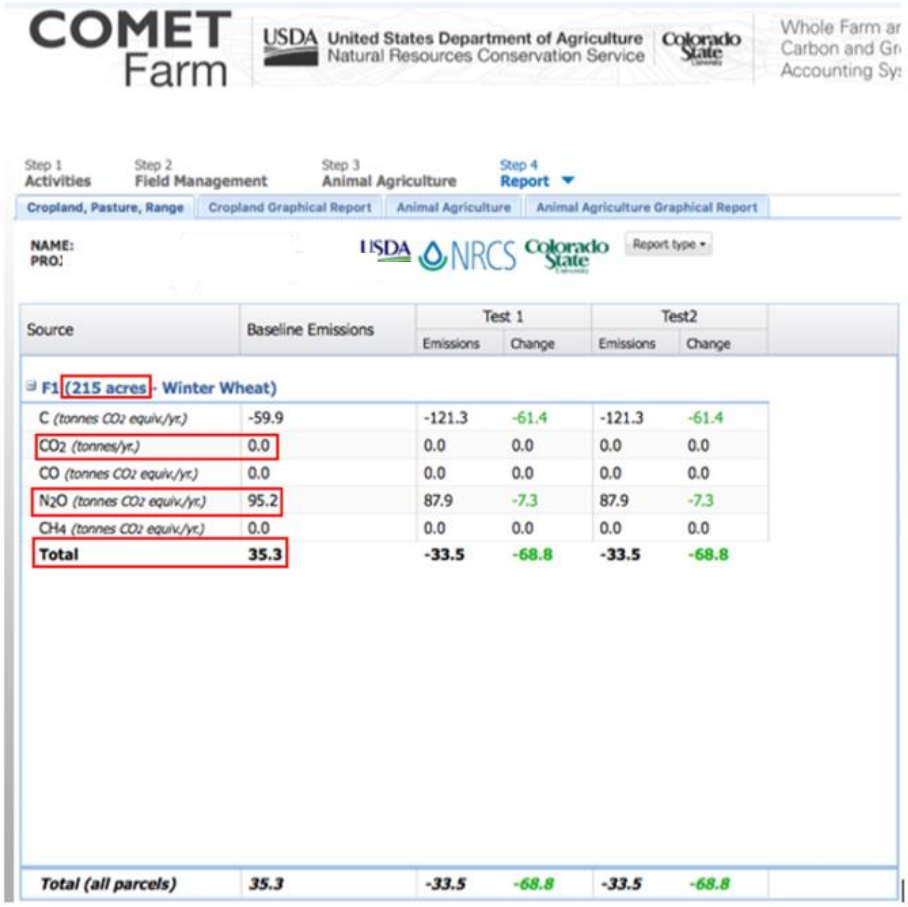
Assessment Date: MM/DD/YYYY

3. If you want to use the Emissions Stand Alone Tool to replace the standard evaluation result, check **Use Alternate Result with Stand Alone Tools as Official Evaluation Result** at the top of the page.

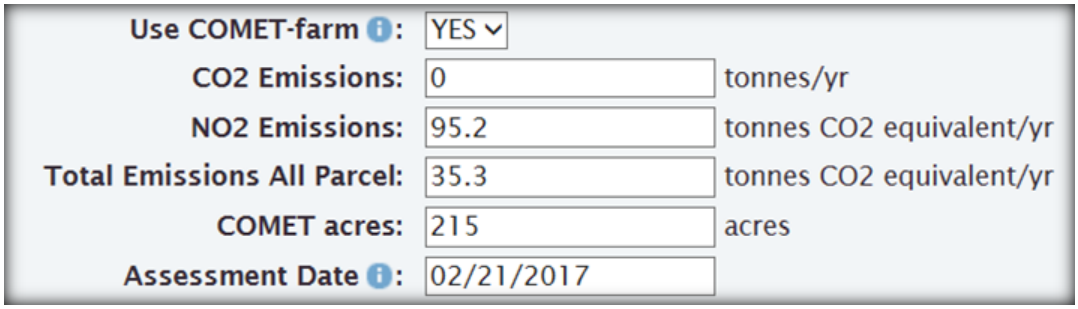


4. Click **Save**.

Below is an example of a COMET-farm report and the RS corresponding entries.



RS corresponding entries.

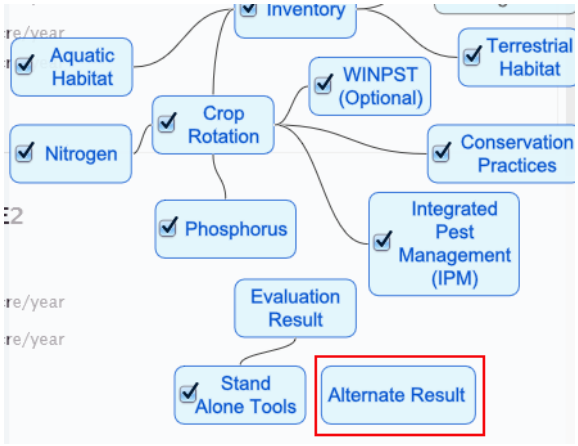


Data from COMET-farm reports can override the following Resource Stewardship Air Quality Key Indicators:

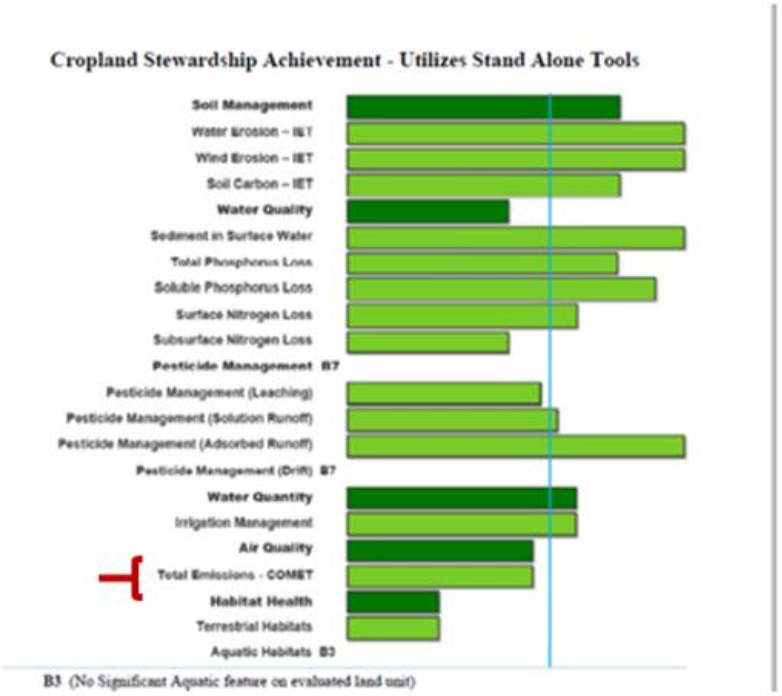
- Soil Carbon
- Nitrogen Loss to Air

These two Key Indicators will be replaced with one new Key Indicator: Total Emissions – COMET (see below for example). If both an erosion tool and COMET are used, always give precedence to COMET results under Air Quality.

5. Click the **Roadmap** icon to open the Roadmap and select **Alternate Result** to view the evaluation.



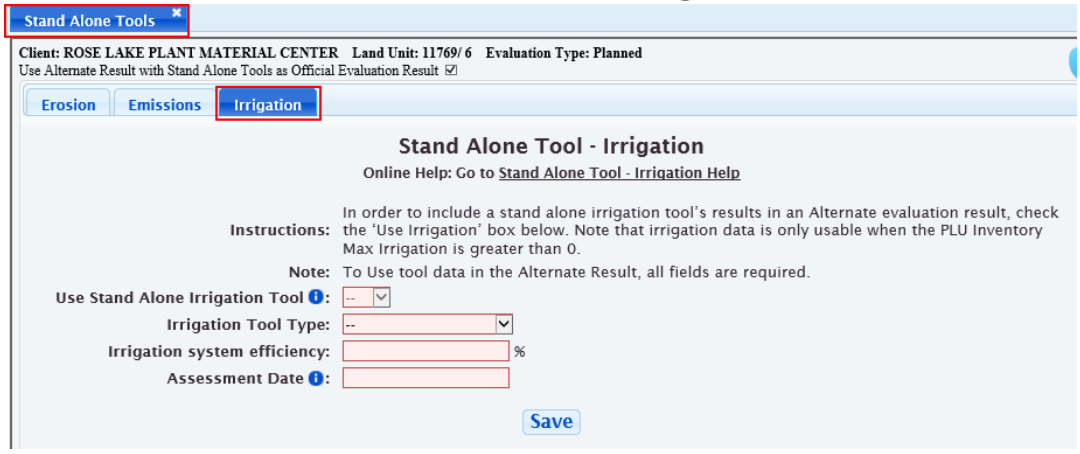
Negative emissions are a good thing (over the threshold). Likewise, positive emissions are bad (below the threshold). The total emissions number is always across full acreage.



Irrigation Stand Alone Tool

Rather than running FIRI in the Irrigation Management tab, externally run National FIRI results or state irrigation tool results can be entered into Resource Stewardship in the Stand Alone Tools tab.

1. Select the **Stand Alone Tools** tab, then select **Irrigation**.



2. Answer the corresponding questions.

Stand Alone Irrigation inputs

Use Stand Alone Irrigation Tool: Yes/No. Select Yes to use result in Alternative Evaluation

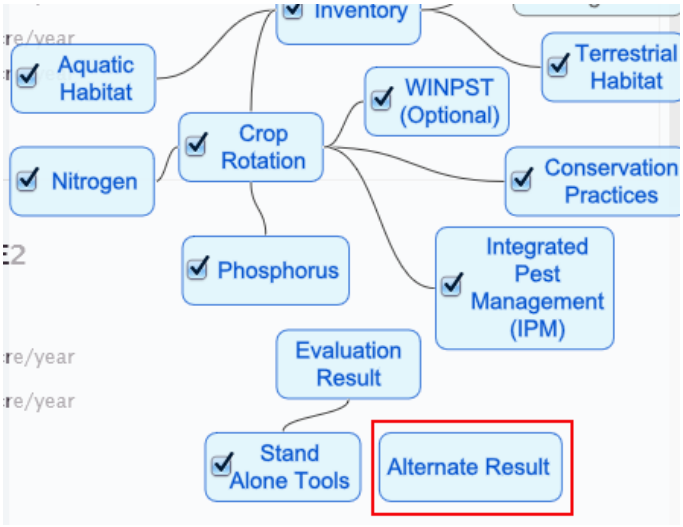
Irrigation Tool Type: Select National FIRI or State Irrigation Tool

Irrigation system efficiency: Percentage from 1 to 100

Assessment Date: MM/DD/YYYY

3. Click **Save**.

4. Click the **Roadmap** icon to open the Roadmap and select **Alternate Result** to view the evaluation.



Below is an example of what the final evaluation looks like when the Irrigation Stand Alone Tool is utilized instead of the standard Resource Stewardship result.

Cropland Stewardship Achievement - Utilizes Stand Alone Tools

B3 (No Significant Aquatic feature on evaluated land unit)
B7 (Per the evaluation of input data, no stewardship points were identified for this result area)

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